US Army Corps of Engineers ®
Rock Island District

Lock & Dam 19
(Keokuk, Iowa)
Mississippi River

General Contractors:
Stage I: McCarthy Improvement Company, Davenport, Iowa
Stage II: Jones Construction Company, Charlotte, North Carolina
Stage III: Oil Gear Company, Milwaukee, Wisconsin
Stage IV: Evans Electrical Construction Company, Omaha, Nebraska
Construction: (1910-1914) 1952-1957
Congressional Districts: IA-2; IL-17

Description

Lock and Dam 19 is 364.2 miles above the confluence of the Mississippi and Ohio rivers. Privately built and owned, the dam was built in 1913 and includes 119 rectangular sliding gates.

The lock was constructed from 1952-1957. The main lock is 110 by 1,200 feet, twice the size of the standard 9-foot navigation channel lock. Normal upper pool elevation is 518.2 feet, about 38.2 feet above the tail waters of the dam at low water. The Keokuk and Hamilton Water Power Company Lock (built between 1910 and 1914) is closed off by a permanent, steel pile, cell structure.

Maximum lift is 38.2 feet with an average lift of 36.3 feet. It takes approximately 10 minutes to fill; 9.25 minutes to empty the lock. It takes 12 hours for water to travel from Lock and Dam 18, in Gladstone, Illinois, to Lock and Dam 19.

History/Significance

The lock opened in 1957. The lock and dam complex was not built as part of the original 9-foot navigation channel project. The Des Moines Canal Bullnose was built from 1867-1870 as part of the Corps' 4-foot channel project. The Keokuk and Hamilton Water Power Company built the dam, power plant, dry dock, and original lock from 1910-1914.

The Corps built the 1,200-foot lock, control houses, utility building, and esplanade in four stages: Stage I – Construction of lock lower approach (1952-1954); Stage II – Lock construction (1954-1956); Stage III – Manufacture and delivery of electrical control equipment and upstream gate operating equipment (1954); Stage IV – Installation of power, control, and lighting system (1956-1957).

During the peak of construction, 415 people were employed. Elements of the lock and dam were listed on the National Register of Historic Places in 1978. The complex was completed at a cost of $37,909,000.

Annual Tonnage (10-Year Historical)

Year	Tons	Year	Tons
1998	31,076,726	2003	29,827,673
1999	35,803,139	2004	24,190,511
2000	34,097,581	2005	24,697,974
2001	30,128,512	2006	26,390,867
2002	34,914,721	2007	25,504,854

(More Information On The Reverse Side)

Commodity Tonnage & Lockages (2007)

Coal	3,829,396	Subtotals:	
Petroleum	396,268		
Chemicals	2,923,029	Grain	14,388,333
Crude Materials	1,850,077	Steel	282,786
Manufactured Goods	734,948		
Farm Products	15,739,962	Lockages:	
Manufactured Machinery	17,040		
Waste Material	1,800	Boats:	3,054
Containers & Pallets	1,624	Cuts:	2,720
Unknown	10,710		

Current Maintenance Issues – Lock & Dam 19

Item (Critical Rank Order)

Major Rehabilitation
Concrete Work - Major Maintenance
Major Rehabilitation – Operations & Maintenance Portion
Downstream Cell Replacement
Mooring Bits Rehabilitation
Ice Gate Study
Systemic Tainter Valve Replacement
Repair Lock Valve Intake Screens
Dewatering Guard Gate
Replacing 70-Year Old Lock Pontoon Barge (Work Flats)
Remove Rock to Modify Downstream Approach
Replace Roof and Brick Veneer on Lock Building
Rehabilitate Upper Control Buildings
Restore Old Lock and Drydock

TOTAL ESTIMATED COST: $53,250,000

As the structures and equipment approach the end of their project lives, breakdowns and failure of mechanical and electrical equipment become more frequent and expensive, with resultant delays and loss of revenue to commercial waterway users. The rehabilitation involves the navigation lock chamber and associated parts. Major work items include resurfacing the lock chamber, rehabilitation of Tainter valves, replacing and refurbishing the lock machinery, miter gates and overall site electrical systems. The rehabilitation was started in Fiscal Year 2003 with a Congressional add of $500,000. Funding for rehabilitation projects is normally provided through Construction General funds, and cost shared 50/50 with the Inland Waterways Trust Fund for the Major Rehabilitation portion of the work; and Operations & Maintenance funds used for the Major Maintenance portion of the work.

Stage I -- Upper gates repair is scheduled for completion in March 2008.

Stage II, Lock Rehabilitation and Miter Gate Replacement -- completed in 2006. After four months of operation, the lower land wall miter gate developed a grinding noise. In 2007, in-house crews repaired the gate. This emergency repair was not included in the Fiscal Year 2007 or 2008 budget, as a result it drew funds from Stage I.

Concrete resurfacing of the lock chamber is deferred (more than $30 million) due to Operations & Maintenance funding levels that will not permit completion of all major maintenance elements.

Potential unscheduled closures of 90 days have been estimated and associated with failures of mechanical equipment. Transportation impacts associated with a 90-day closure of Lock 19, outside of the winter closure, would approach $53 million. AmerenUE, a privately owned utility company, owns the adjacent navigation/hydroelectric dam.

Point of Contact

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